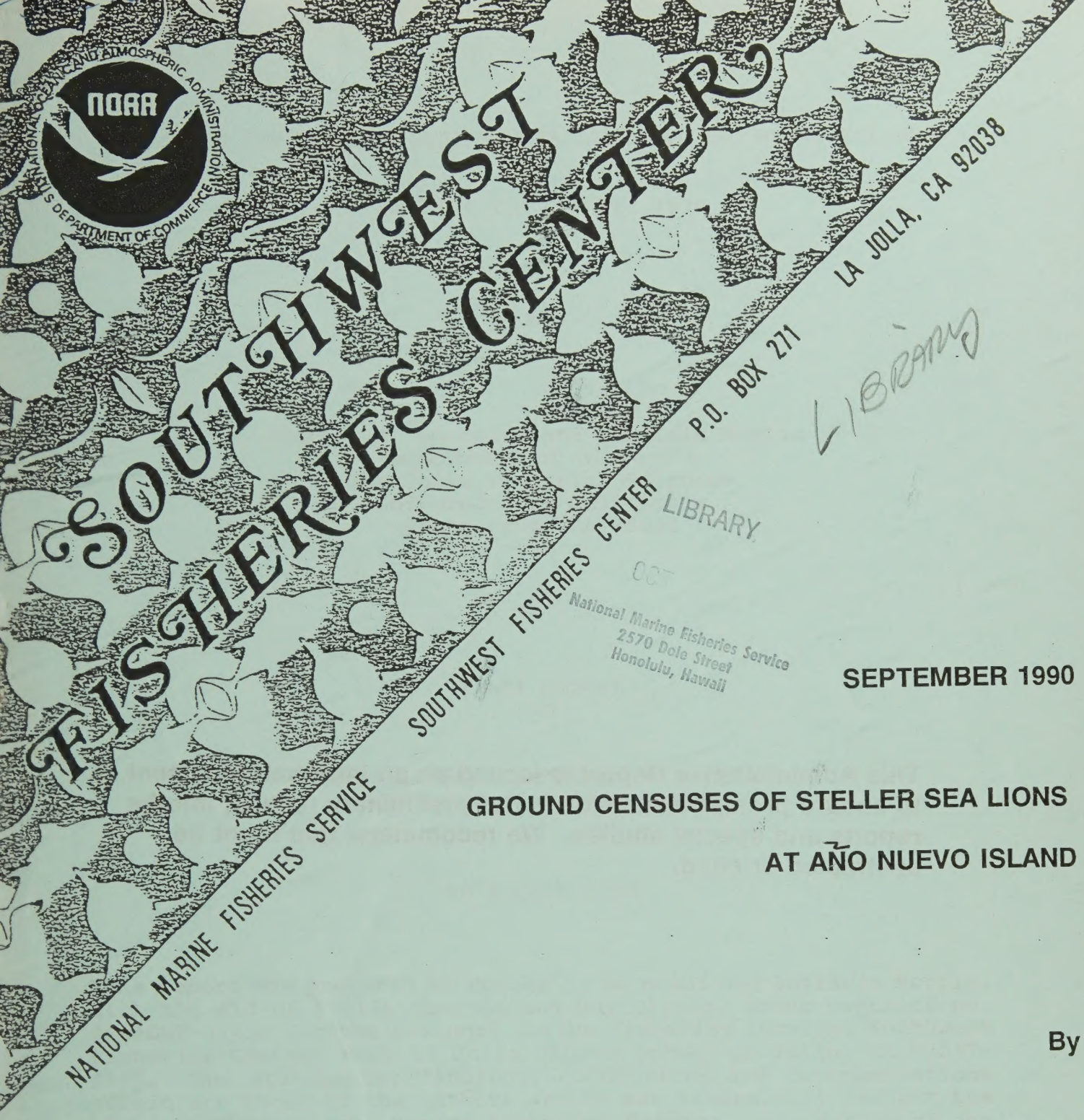

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GROUND CENSUSES OF STELLER SEA LIONS AT AÑO NUEVO ISLAND

By

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Patricia Morris

ADMINISTRATIVE REPORT LJ-90-25C

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GROUND CENSUSES OF STELLER SEA LIONS AT AÑO NUEVO ISLAND IN JULY AND AUGUST, 1990

by

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Final Report
to

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TABLE OF CONTENTS

PAGE

PURPOSE..... 1

METHODS..... 1

BACKGROUND..... 1

RESULTS..... 2

DISCUSSION..... 2

TABLES

PAGE

TABLE 1. Ground census of Steller sea lions at Año Nuevo Island at 1140 to 1300 hrs on 11 July 1990. The sky was overcast with a wind of approximately 10-20 knots. The island was censused from the air at approximately 1215 hrs. All ground censuses were taken before the aerial census except for areas 14 and 15 which were taken after the aerial census at 1300 hrs..... 3

TABLE 2. Ground census of Steller sea lions at Año Nuevo Island on 29 July 1990..... 4

TABLE 3. Ground census of Steller sea lions at Año Nuevo Island on 1 August 1990..... 5

FIGURE

FIGURE 1. A Schematic drawing of Año Nuevo Island showing the areas referred to in this report..... 6

PURPOSE

A ground census of Steller sea lions, *Eumetopias jubatus*, on Año Nuevo Island, California, was taken on 11 July 1990 at the same time that a census was taken from the air. The aim of this study was to determine how well the two methods agree so that correction factors can be applied in future censuses when only one method is used. Two additional censuses, one on 29 July and the other on 1 August, are presented for perspective.

METHODS

All censuses were conducted by Patricia Morris with the assistance of Philip Thorson and Guy Oliver. Año Nuevo Island was censused in easily separable areas (Figure 1). Areas 2, 3, 8, 9, 10, 11, and 12 were counted from the lower roof of the foghorn house using 10X binoculars. From this perspective, areas 10E and 10W cannot be distinguished and therefore, they were combined into one area, area 10. Censusing area 12 was difficult under windy conditions. This reduced resolution in sexing animals and led to minimal counts of pups, who were often hidden behind adults. Areas 6 and 7 were counted from the blind near the peak of the foghorn house. Areas 13, 14, 15, and 20 were counted from the blind on area 20 overlooking area 14. Areas 1 and 17 were counted from area 17. Arrival on the island by rubber raft caused some subadult males to enter the water but the censuser's presence on the island had no noticeable effect on Steller sea lion elsewhere on the island. It is important to stress that all censuses are minimal estimates of animals present.

For the 11 July census, the animals were categorized as follows: males (adult territorial males and non-territorial subadult males), breeding age females, pups of the year, and juveniles, 1-2 years old. Weather conditions did not permit distinguishing adult from subadult males reliably especially on areas 11, 12 and 14.

BACKGROUND

Two events occurred during the beginning of the breeding season that may have had some bearing on the counts in July. On the night 29 May, a large sailboat ran aground on area 12. The crew was rescued the following morning and taken off the rocks by rubber raft. On 31 May, the boat was lifted by a sky crane and transported to the adjacent mainland. There were few breeding females present at this time and no pups had been born yet. Territorial males, seen from the mainland, appeared to hold their ground as helicopters and crews went to and fro. The day after the vessel was airlifted, two dead pups were found on the beach north of area 20.

The other event that affected Steller activities and number was abalone fishermen on the periphery of the island during low tides in June. Counts were low on 23 June (not reported here) due to fishermen causing sea lions to enter the water.

RESULTS

The censuses are presented in Tables 1, 2 and 3. The high pup count was 135 on 1 August, a modest increase over the count of 111 on 11 July. Considering that three pups died before the 11 July census and a sick one was removed for treatment, a minimum of 139 pups was produced at Año Nuevo Island in 1990.

The highest counts of the other categories during the 1990 breeding season were 123 males on 21 June, 283 females on 1 August, and 4 juveniles on 29 July. Summing the highest counts for each animal category yields a total of 549 animals.

It is clear from the data in the tables that females began moving to different areas on the island after the 11 July census. Many females took their pups with them; this made the pups more visible and accountable. Some females may have given birth in these new areas after the 11 July census.

DISCUSSION

The ground censuses presented here are minimal counts of animals present. In the case of pups, we suspect that the underestimate is substantial, perhaps as much as 50%. Comparison with the aerial census will reveal the magnitude of the error.

Interpretation of the censuses of Steller sea lions in 1990 will be aided by comparison with counts over the last few decades, a project that is in progress.

Table 1. Ground census of Steller sea lions at Año Nuevo Island at 1140 to 1300 hrs on 11 July 1990. The sky was overcast with a wind of approximately 10-20 knots. The island was censused from the air at approximately 1215 hrs. All ground censuses were taken before the aerial census except for areas 14 and 15 which were taken after the aerial census at 1300 hrs.

Area	Males	SA males	Females	Pups	Juv.	Totals
2	33					33
6A	2					2
7	1					1
8	1					1
9	2					2
10	12	5	137	92	1	247
11	15					15
12	5	9	62	19		95
14	21					21
15	1	4				2
Totals	93	18	199	111	1	422

Note: one female had a fishing flasher in her mouth

Table 2. Ground census of Steller sea lions at Año Nuevo Island on 29 July 1990.

Area	Males	SA males	Females	Pups	Juv.	Totals
2		1	3	1		5
3A		1				1
6			1			1
7		2	52	12	2	68
8			18	7		25
9						
10	5		100	72	1	178
11			4			4
12	4		69	18		91
14			10		1	11
15			3			3
17		1				1
20			1			1
Totals	9	5	261	110	4	389

Table 3. Ground census of Steller sea lions at Año Nuevo Island on 1 August 1990.

Area	Males	SA males	Females	Pups	Juv.	Totals
2			1			1
3A						
6			13	2		15
7		2	41	17		60
8	1	2	81	48	1	133
9						
10		1	68	51		120
11		1	7			8
12	1	3	59	15		78
14		1	10	2	2	15
15						
17		1				1
20		2	3			5
Totals	2	13	283	135	3	436

Notes:
(1) Three shark bitten females were observed.
(2) One female with a fishing flasher hanging from her mouth was seen.
(3) The skull of a dead Steller sea lion female at South Point on the mainland was collected by Ray Bandar of California Academy of Sciences. The carcass had no obvious external injuries.

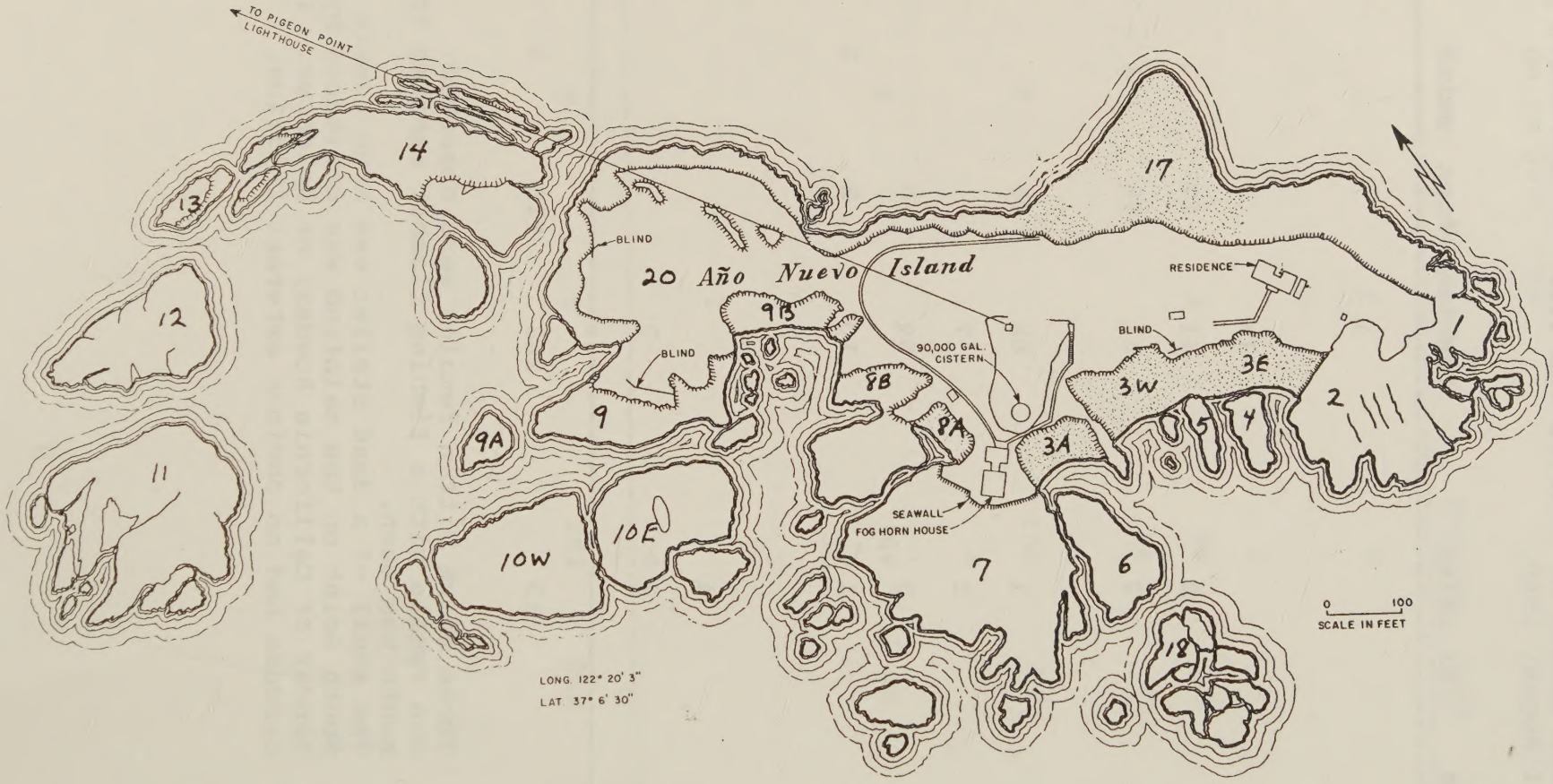

Figure 1. A schematic drawing of Año Nuevo Island showing the areas referred to in this report.